Pinus ponderosa / Quercus macrocarpa Woodland

COMMON NAME	Ponderosa Pine / Bur Oak Woodland
SYNONYM	Ponderosa Pine / Bur Oak Woodland
PHYSIOGNOMIC CLASS	Woodland (II)
PHYSIOGNOMIC SUBCLASS	Evergreen woodland (II.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar needle-leaved evergreen woodland (II.A.4)
PHYSIOGNOMIC SUBGROUP	Natural/semi-natural (II.A.4.N)
FORMATION	Rounded-crowned temperate or subpolar needle-leaved evergreen woodland (II.A.4.N.a.)
ALLIANCE	*Pinus ponderosa* Woodland Alliance

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Upland

RANGE
Globally
This community is found in northeastern Wyoming and in parts of southeastern Montana and western South Dakota.

Mount Rushmore National Memorial
This community occurs most commonly in drainages in the eastern half of the study area (east of Mt. Rushmore).

ENVIRONMENTAL DESCRIPTION
Globally
This community is found on rolling hills and ridgetops on calcareous substrates (Hoffman and Alexander 1987, Johnston 1987). Hoffman and Alexander report that it may also occur on soils derived from igneous substrates. The soils are sandy loams to clayey loams with a pH of 5.3-6.0.

Mount Rushmore National Memorial
Stands of this community were found typically in drainage bottoms. Stands of pine with significant amounts of oak occasionally are found on slopes.

MOST ABUNDANT SPECIES
Globally

Stratum	Species
Tree canopy	*Pinus ponderosa*
Subcanopy	*Quercus macrocarpa*
Short shrub	*Amelanchier alnifolia, Mahonia repens, Prunus virginiana*
Herbaceous	*Carex foenea, Galium boreale, Maianthemum stellatum, Oryzopsis asperifolia, Vicia americana*

Mount Rushmore National Memorial

Stratum	Species
Tree canopy	*Pinus ponderosa, Quercus macrocarpa*
Subcanopy	*Pinus ponderosa, Quercus macrocarpa*
Short shrub	*Symphoricarpos* spp.

DIAGNOSTIC SPECIES
Globally
Pinus ponderosa, Quercus macrocarpa

Mount Rushmore National Memorial
Pinus ponderosa, Quercus macrocarpa

VEGETATION DESCRIPTION
Globally
Pinus ponderosa is the only species found in the canopy in most stands of this community. Hoffman and Alexander (1987) sampled 4 stands of this type and found an average basal area of 36.2 m2/ ha and an average density of 587 trees/ ha. *Quercus macrocarpa* forms a discontinuous subcanopy with an average cover of 18%. Common shrubs are *Amelanchier alnifolia, Mahonia repens, Prunus virginiana,* and *Spiraea betulifolia*. Typical herbaceous species are *Carex foenea, Apocynum androsaemifolium, Galium boreale, Maianthemum stellatum, Oryzopsis asperifolia, Lupinus argentus,* and *Vicia americana*. Hoffman and Alexander (1987) found the cover by strata was shrubs - 60%, and herbaceous - 18%.

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Stands of this vegetation type are dominated by both *Pinus ponderosa* and *Quercus macrocarpa. Q. macrocarpa* may occur as occasional individuals in other pine types also. *Populus tremuloides* occasionally is present and may contribute significantly to the canopy. Canopy or subcanopy coverage often is greater than 60%. Stand structure varies. In some stands, *Q. macrocarpa* forms the canopy with an occasional emergent *P. ponderosa.* In other situations, *P. ponderosa* forms a sparse canopy with *Q. macrocarpa* and *P. ponderosa* in the understory. *Prunus virginiana* and *Symphoricarpos* spp. are the most common shrub species. Herbaceous cover usually is greater than 60% with a variety of species present.

OTHER NOTEWORTHY SPECIES

CONSERVATION RANK G3

RANK JUSTIFICATION

DATABASE CODE CEGL000873

COMMENTS
Globally
Periodic fires are probably important in promoting oak regeneration.

The stands used to document the *Pinus ponderosa / Quercus macrocarpa* Habitat Type described by Hoffman and Alexander (1987) had very high basal area and densities for a woodland, possibly due to their sampling procedure. The dense structure may have affected the floristic makeup of the stands.

REFERENCES
Hoffman, G. R. and R. R. Alexander. 1987. Forest vegetation of the Black Hills National Forest of South Dakota and Wyoming: a habitat type classification. Research Paper RM-276. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. 48 p.

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McAdams, A. G., D. A. Stutzman, and D. Faber-Langendoen. 1998. Black Hills Community Inventory, unpublished data. The Nature Conservancy, Midwest Regional Office, Minneapolis, MN.

Thilenius, J. F. 1972. Classification of deer habitat in the ponderosa pine forest of the Black Hills, South Dakota. USDA Forest Service Research Paper RM-1, Fort Collins, CO. 28 p.